



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,132	08/18/2003	Robert L. Sullivan	SMI0096.US	3311

7590 01/12/2006

Todd T. Taylor  
TAYLOR & AUST, P.C.  
P.O. Box 560  
142 S. Main St.  
Avilla, IN 46710

EXAMINER
----------

SHAFFER, RICHARD R

ART UNIT	PAPER NUMBER
----------	--------------

3733

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/643,132	<b>Applicant(s)</b> SULLIVAN ET AL.	
	<b>Examiner</b> Richard R. Shaffer	<b>Art Unit</b> 3733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 02 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 20-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>8/18/2003</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election of **Group I**, claims 1-19 in the reply filed on December 2<sup>nd</sup>, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 20-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on December 2<sup>nd</sup>, 2005.

### ***Drawings***

The drawings are objected to, see attached Draftsperson's Patent Drawing Review Sheet. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date

Art Unit: 3733

of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The disclosure is objected to because of the following informalities: The Brief Description of the Drawings is improper. It should only state Figure #: (1-3 Line Description). Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 7-11, 15, and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by DiPietropolo (US Patent 4,751,922).

DiPietropolo discloses a flexible medullary reamer assembly comprising: a reamer (3) and attachment element both made of metal (Column 4, Lines 39-41); a solid or tubular (Column 3, Lines 32-35 state a bore is optional) flexible shaft having a longitudinal axis and longitudinal length made of thermoplastics or composites (Claims 2 and 6), because DiPietropolo required torsional strength, the thermoplastics deemed appropriate would have included those that are rigid, further because the material would be rigid and flexibility required still to feed the shaft through an intramedullary canal, the area moment of inertia would have to be "relatively" low in order to allow for bending; a stainless steel (Column 4, Lines 57-59) chuck end (4); and the shaft and reamer to be fixed together (Column 4, Lines 41-51).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-4, 6, 12-14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over DiPietropolo in view of Tangram Technology Data File.

DiPietropolo discloses all of the claimed limitations except the use of Polyether ether ketone (PEEK) as well as range values for the "low" moment of inertia. Tangram Technology teaches (Introduction, Typical Applications, Physical and Mechanical Properties) that PEEK is a "new generation of engineering thermoplastics" that are suitable for use at high temperatures, have excellent chemical resistance, high strength, good resistance to burning, used in prosthetics and instruments, and has a low coefficient of friction and wear rate. DiPietropolo as discussed previously preferred thermoplastics and also desired (Column 3, Lines 29-32 and 55-59) that the material possess the required degree of flexibility, torsional strength (high strength), resistance to abrasion (low wear rate), and repeatedly being steam sterilized (resistance to burning). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize PEEK as a thermoplastic in the device of DiPietropolo in order to meet the requirements of wear, torsional strength, heat resistance, and medical use.

In regard to claims 3, 4, 13, and 14, DiPietropolo in view of Tangram Technology Data File disclose the claimed invention except for the area moment of inertia values

Art Unit: 3733

falling between 0.0003 inches<sup>3</sup> to 0.000002 inches<sup>3</sup> or 0.0002 inches<sup>3</sup> to 0.00001 inches<sup>3</sup>. It would have been obvious to one having ordinary skill in the art at the time the invention was made to calculate ranges falling within those claimed by using inherent material properties of PEEK to design a flexible shaft, since it has been held that when the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

### **Conclusion**

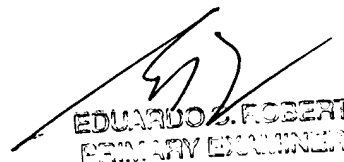
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard R. Shaffer whose telephone number is 571-272-8683. The examiner can normally be reached on Monday-Friday during (7am-5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eduardo Robert can be reached on 571-272-4719. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Richard Shaffer*

Richard Shaffer  
January 6<sup>th</sup>, 2006

  
EDUARDO ROBERT  
PRIMARY EXAMINER